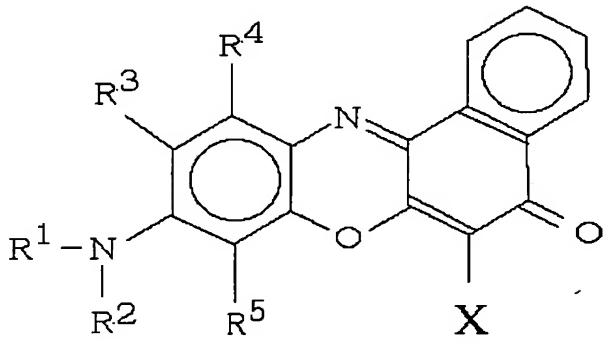
AMENDMENTS TO THE CLAIMS

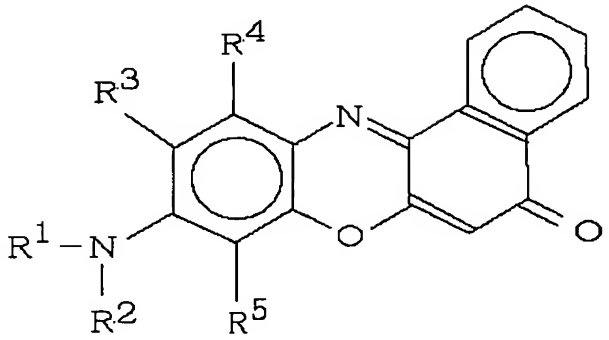
1. (Original)A Nile red luminescent compound emitting red light that has a structure represented by formula (1):



. . . (1)

wherein R^1 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^6R^7-$ together with R^3 (wherein the carbon atom of $-CR^6R^7-$ moiety is bound to the benzene moiety of the formula (1), each of R^6 and R^7 is hydrogen atom or an alkyl group, and R^6 and R^7 may be the same or different from each other); R^2 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^8R^9-$ together with R^5 (wherein the carbon atom of $-CR^8R^9-$ moiety is bound to the benzene moiety of the formula (1), each of R^8 and R^9 is hydrogen atom or an alkyl group, and R^8 and R^9 may be the same or different from each other); R^3 is hydrogen atom, forms $-CH_2CH_2-CR^6R^7-$ with R^1, or forms with R^4 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^4 is hydrogen atom, or forms with R^3 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^5 is hydrogen atom, or forms $-CH_2CH_2-CR^8R^9-$ with R^2; and X is a halogen atom.

2. (Currently amended) A process of producing the Nile red luminescent compound emitting red light represented by the formula (1), comprising reacting with a halogenating agent a Nile red pigment represented by general formula (2):

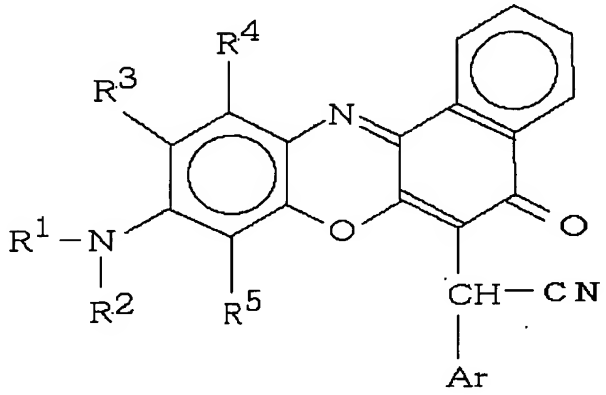


... (2)

~~wherein R^1, R^2, R^3, R^4 and R^5 are respectively the same as those defined in claim 1.~~

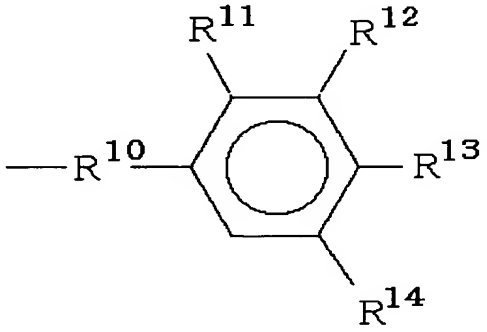
wherein R^1 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^6R^7-$ together with R^3 (wherein the carbon atom of $-CR^6R^7-$ moiety is bound to the benzene moiety of the formula (1), each of R^6 and R^7 is hydrogen atom or an alkyl group, and R^6 and R^7 may be the same or different from each other); R^2 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^8R^9-$ together with R^5 (wherein the carbon atom of $-CR^8R^9-$ moiety is bound to the benzene moiety of the formula (1), each of R^8 and R^9 is hydrogen atom or an alkyl group, and R^8 and R^9 may be the same or different from each other); R^3 is hydrogen atom, forms $-CH_2CH_2-CR^6R^7-$ with R^1, or forms with R^4 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^4 is hydrogen atom, or forms with R^3 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); and R^5 is hydrogen atom, or forms $-CH_2CH_2-CR^8R^9-$ with R^2.

3. (Currently amended) A Nile red compound emitting red light that has a structure represented by formula (3).



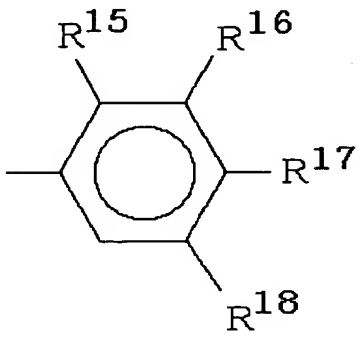
... (3)

wherein R^1~~, R^2~~, is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^6R^7-$ together with R^3, ~~R^4~~- (wherein the carbon atom of $-CR^6R^7-$ moiety is bound to the benzene moiety of the formula (1), each of R^6 and ~~R^5 mean the same atoms~~R^7 is hydrogen atom or an alkyl group, and ~~groups~~R^6 and R^7 may be the same or different from each other); R^2 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^8R^9-$ together with R^5 (wherein the carbon atom of $-CR^8R^9-$ moiety is bound to the benzene moiety of the formula (1), each of R^8 and R^9 is hydrogen atom or an alkyl group, and R^8 and R^9 may be the same or different from each other); R^3 is hydrogen atom, forms $-CH_2CH_2-CR^6R^7-$ with R^1, or forms with R^4 a naphthalene ring including as ~~those defined in claim 1;~~a part thereof the benzene moiety of the formula (1); R^4 is hydrogen atom, or forms with R^3 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^5 is hydrogen atom, or forms $-CH_2CH_2-CR^8R^9-$ with R^2; and Ar means one of formulae (4), (6) and (7):



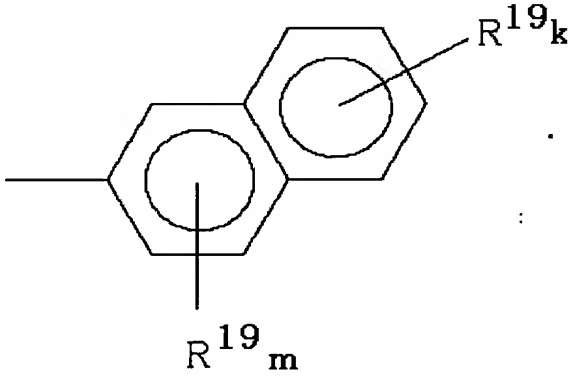
. . . . (4)

wherein R^{10} is a single chemical bond or methylene group; R^{11} is hydrogen atom, or forms $-CF_2-O-CF_2-$ with R^{12}; R^{12} is fluorine atom, cyano group or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, forms $-CF_2-O-CF_2-$ with R^{11}, or forms $-CF_2-O-CF_2-$ with R^{13}; R^{13} is hydrogen atom, cyano group, fluorine atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, forms $-CF_2-O-CF_2-$ with R^{12}, or is a group represented by formula (5); and R^{14} is hydrogen atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom when R^{13} is hydrogen atom, and R^{14} is hydrogen atom when R^{13} is not hydrogen atom,



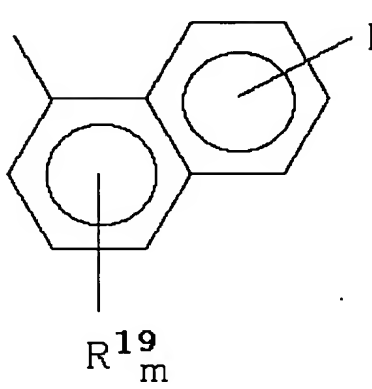
. . . . (5)

wherein R^{15} is hydrogen atom, or forms $-CF_2-O-CF_2-$ with R^{16}; R^{16} is fluorine atom, cyano group or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, forms $-CF_2-O-CF_2-$ with R^{15}, or forms $-CF_2-O-CF_2-$ with R^{17}; R^{17} is hydrogen atom, cyano group, fluorine atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, or forms $-CF_2-O-CF_2-$ with R^{16}; and R^{18} is hydrogen atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom when R^{17} is hydrogen atom, and R^{18} is hydrogen atom when R^{17} is not hydrogen atom,



. . . . (6)

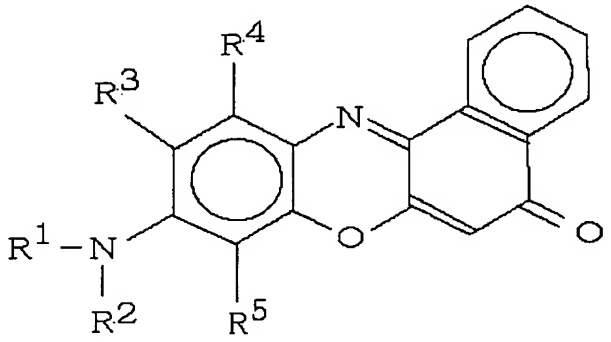
wherein R^{19} is fluorine atom, cyano group, or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom; k is an integer of 1-4, m is an integer of 1-3, and all of the R^{19} groups may be the same or different from each other,



. . . . (7)

wherein R^{19} is fluorine atom, cyano group, or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom; k is an integer of 1-4, m is an integer of 1-3, and all of the R^{19} groups may be the same or different from each other.

4. (Currently amended) A process of preparing the Nile red luminescent compound emitting red light represented by the formula (3) comprises reacting the Nile red pigment compound represented by the formula (2) with an electron attractive aromatic acetonitrile represented by formula (8):



. . . (2)

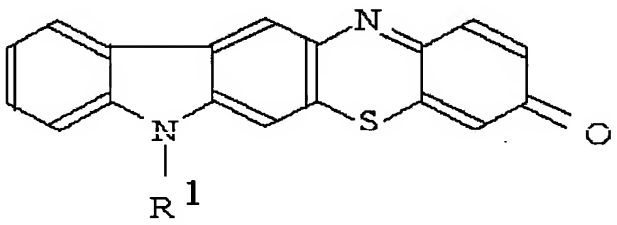
~~wherein R^1, R^2, R^3, R^4 and R^5 are respectively the same as those defined in claim 1,~~ wherein R^1 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^6R^7-$ together with R^3 (wherein the carbon atom of $-CR^6R^7-$ moiety is bound to the benzene moiety of the formula (1), each of R^6 and R^7 is hydrogen atom or an alkyl group, and R^6 and R^7 may be the same or different from each other); R^2 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^8R^9-$ together with R^5 (wherein the carbon atom of $-CR^8R^9-$ moiety is bound to the benzene moiety of the formula (1), each of R^8 and R^9 is hydrogen atom or an alkyl group, and R^8 and R^9 may be the

same or different from each other); R^3 is hydrogen atom, forms $-CH_2CH_2-CR^6R^7-$ with R^1, or forms with R^4 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^4 is hydrogen atom, or forms with R^3 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); and R^5 is hydrogen atom, or forms $-CH_2CH_2-CR^8R^9-$ with R^2,

$$NC-CH_2-Ar \quad \ldots (8)$$

wherein Ar is the same as that defined in claim 3.

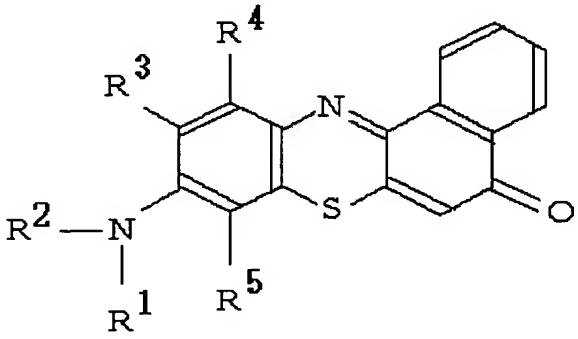
5. (Original) A Nile red luminescent compound emitting red light that has a structure represented by formula (9):



$\cdots$ (9)

wherein R^1 is hydrogen atom or an alkyl group.

6. (Currently amended) A Nile red luminescent compound emitting red light that has a structure represented by formula (10):



$\cdots$ (10)

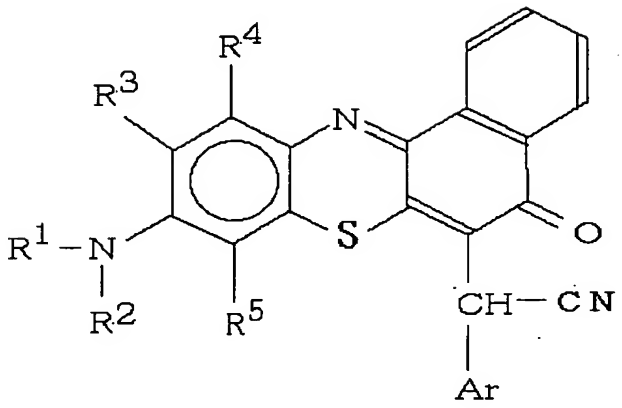
~~wherein R^1, R^2, R^3, R^4 and R^5 are respectively the same as those defined in claim 1.~~

wherein R^1 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^6R^7-$ together with R^3 (wherein the carbon atom of $-CR^6R^7-$ moiety is bound to the benzene moiety of the formula (1), each of R^6 and R^7 is hydrogen atom or an alkyl group, and R^6 and R^7 may be the same or different from each other); R^2 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^8R^9-$ together with R^5 (wherein the carbon atom of $-CR^8R^9-$ moiety is bound to the benzene moiety of the formula (1), each of R^8 and R^9 is hydrogen atom or an alkyl group, and R^8 and R^9 may be the same or different from each other); R^3 is hydrogen atom, forms $-CH_2CH_2-CR^6R^7-$ with R^1, or forms with R^4 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^4 is hydrogen atom, or forms with R^3 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); and R^5 is hydrogen atom, or forms $-CH_2CH_2-CR^8R^9-$ with R^2.

7. (Original) The process of producing the Nile red luminescent compound according to claim 5 comprising reacting 4-nitrosophenol with a carbazole, the nitrogen atom of which is bonded with a substituent R^1, wherein R^1 is hydrogen atom or an alkyl group, to produce an intermediate compound, and reacting the intermediate compound with sulfur.

8. (Original) A process of producing the Nile red luminescent compound according to claim 6 comprising reacting 1-naphphol with a 4-nitrosoaniline, the amino group of which is bonded with substituents R^1 and R^2, wherein each of R^1 and R^2 is hydrogen atom or an alkyl group, and R^1 and R^2 may be the same or different from each other, to produce an intermediate; and reacting the intermediate with sulfur.

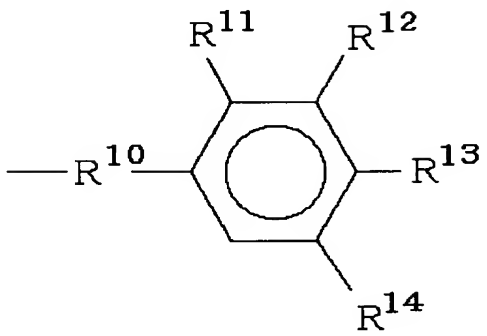
9. (Currently amended)) A Nile red luminescent compound emitting red light that has a structure represented by formula (11):



... (11)

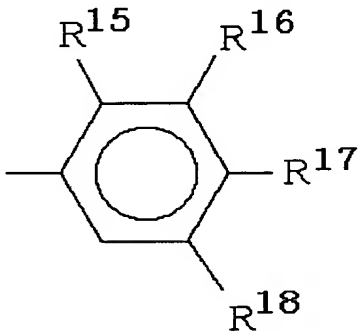
wherein R^1, ~~R^2,~~ is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^6R^7-$ together with R^3, ~~R^4~~ (wherein the carbon atom of $-CR^6R^7-$ moiety is bound to the benzene moiety of the formula (1), each of R^6 and ~~R^5 are respectively~~R^7 is hydrogen atom or an alkyl group, and R^6 and R^7 may be the same or different from each other); R^2 is hydrogen atom or an alkyl group, or forms $-CH_2CH_2-CR^8R^9-$ together with R^5 (wherein the carbon atom of $-CR^8R^9-$ moiety is bound to the benzene moiety of the formula (1), each of R^8 and R^9 is hydrogen atom or an alkyl group, and R^8 and R^9 may be the same or different from each other); R^3 is hydrogen atom, forms $-CH_2CH_2-CR^6R^7-$ with R^1, or forms with R^4 a naphthalene ring including as ~~those defined in claim 1, and~~ a part thereof the benzene moiety of the formula (1); R^4 is hydrogen atom, or forms with R^3 a naphthalene ring including as a part thereof the benzene moiety of the formula (1); R^5 is hydrogen atom, or forms $-CH_2CH_2-CR^8R^9-$ with R^2; and Ar is the same as that defined in the claim 3.

10. (Currently amended) A process of producing the Nile red luminescent compound emitting red light according to claim 9 comprising reacting the Nile red luminescent compound emitting red light represented by the formula (10) with an electron attractive aromatic acetonitrile represented by the formula $NC-CH_2-Ar$, wherein Ar ~~is the same as that defined in claim 3.~~means one of formulae (4), (6) and (7):



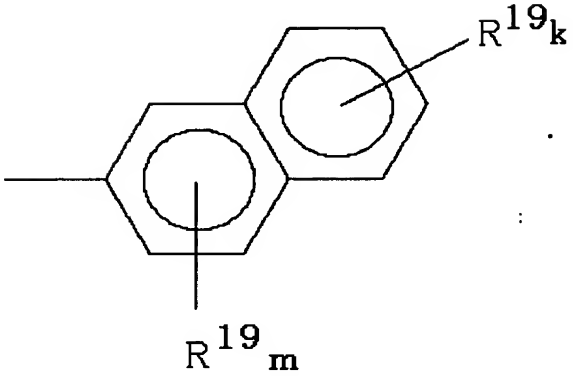
. . . . (4)

wherein R^{10} is a single chemical bond or methylene group; R^{11} is hydrogen atom, or forms $-CF_2-O-CF_2-$ with R^{12}; R^{12} is fluorine atom, cyano group or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, forms $-CF_2-O-CF_2-$ with R^{11}, or forms $-CF_2-O-CF_2-$ with R^{13}; R^{13} is hydrogen atom, cyano group, fluorine atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, forms $-CF_2-O-CF_2-$ with R^{12}, or is a group represented by formula (5); and R^{14} is hydrogen atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom when R^{13} is hydrogen atom, and R^{14} is hydrogen atom when R^{13} is not hydrogen atom,



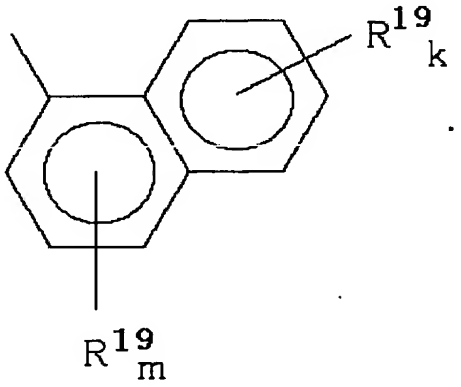
. . . . (5)

wherein R^{15} is hydrogen atom, or forms $-CF_2-O-CF_2-$ with R^{16}; R^{16} is fluorine atom, cyano group or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, forms $-CF_2-O-CF_2-$ with R^{15}, or forms $-CF_2-O-CF_2-$ with R^{17}; R^{17} is hydrogen atom, cyano group, fluorine atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom, or forms $-CF_2-O-CF_2-$ with R^{16}; and R^{18} is hydrogen atom or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom when R^{17} is hydrogen atom, and R^{18} is hydrogen atom when R^{17} is not hydrogen atom,



. . . . (6)

wherein R^{19} is fluorine atom, cyano group, or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom; k is an integer of 1-4, m is an integer of 1-3, and all of the R^{19} groups may be the same or different from each other,



. . . . (7)

wherein R^{19} is fluorine atom, cyano group, or a lower alkyl having 1-5 carbon atoms and at least one fluorine atom; k is an integer of 1-4, m is an integer of 1-3, and all of the R^{19} groups may be the same or different from each other.

11. (Original) A luminescence element comprising a pair of electrodes and a light-emitting layer including at least one of the Nile red luminescent compounds as claimed in any one of claims 1, 3, 5, 6 and 9.

12. (Original) A luminescence element as claimed in claim 11, further comprising a hole-transporting layer between the light- emitting layer and a cathode, which is one of the electrodes.

13. (Currently amended) ~~The~~ A luminescence element as claimed in claim 12, ~~wherein~~ the light-emitting layer ~~includes at least one of the Nile red luminescent compounds as claimed in any one of claims 1, 3, 5, 6 and 9, and a host pigment~~further including a host pigment.

14. (Currently amended) The luminescence element as claimed in claim 12 ~~or 13~~, wherein the light-emitting layer and the hole-transporting layer are formed by deposition.

15. (Currently amended) The luminescence element as claimed in claim ~~11~~13, wherein the light-emitting layer ~~includes at least one of the Nile red luminescent compounds as claimed in any one of claims 1, 3, 5, 6 and 9, an electron-transporting substance, and~~ a the hole-transporting ~~high polymer~~layer are formed by deposition.

16. (Currently amended) ~~The~~ A luminescence element as claimed in claim ~~15~~11, ~~wherein~~ the light-emitting layer ~~is formed through the application of the layer~~further including an electron-transporting substance, and a hole-transporting high polymer.

17. (New) The luminescent element as claimed in claim 16, wherein the light-emitting layer is formed through the application of the layer.